

Scavenger Transceiver Module
 STM 300 / STM 300U

The extremely power saving RF transmitter module STM 300 of EnOcean enables the realization of wireless and maintenance free sensors and actuators such as room operating panels, motion sensors or valve actuators for heating control.

Power supply is provided by an external energy harvester, e.g. a small solar cell or a thermal harvester. An energy storage device can be connected externally to bridge periods with no supply from the energy harvester. A voltage limiter avoids damaging of the module when the supply from the energy harvester gets too high.

The module provides a user configurable cyclic wake up (every 1, 10 or 100 sec.). After wake up a radio telegram (input data, unique 32 bit sensor ID, checksum) will be transmitted in case of a change of any digital input value compared to the last sending or in case of a significant change of measured analogue values (different input sensitivities can be selected). In case of no relevant input change a redundant retransmission signal is sent after a user configurable number of wake-ups to announce all current values. In addition a wake up can be triggered externally.


Features

- 3 A/D converter inputs
- 4 digital inputs
- Configurable wake-up and transmission cycle
- Wake-up via Wake pins
- Voltage limiter
- Threshold detector

Type

 STM 300
 STM 300U

Ordering Code

 S3001-D300
 S3051-D300

Technical Data

Antenna	External whip or 50 Ω antenna mountable
Frequency	STM 300: 868.300MHz (ASK) ¹⁾ STM 300U: 902.875MHz (FSK) ¹⁾
Data rate	125 kbps
Receiver Sensitivity (at 25°C) only via API	typ. -96 dBm ²⁾ (868.300 MHz) typ. -98 dBm ²⁾ (902.875 MHz)
Conducted Output Power @50Ω	STM 300: 3 dBm STM 300U: 1 dBm
Power Supply	2.1 V–4.5 V, 2.6 V needed for startup
Current Consumption	Deep Sleep Mode: 0.2 μA Rx mode (API only): 33 mA / Tx mode: 24 mA
Dimensions of PCB	22x19x3 mm
Input Channels	4x digital input, 2x WAKE input, 3x analog input Resolution: 3x 8 bit or 1x 10 bit, 1x 8 bit, 1x 6 bit
Operating temperature	-25 up to +85°C
Radio Regulations	STM 300 (max. radiated power +1.4 dBm with whip): RED (EU) STM 300U: FCC (US) / ISED (CA)

1) according to ISO/IEC 14543-3-1x

2) @ 0.1% telegram error rate (based on transmitted sub-telegrams)